Pittsburgh

**Crime vs Social Conditions (correlations)**

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**Crime vs Social Conditions (correlations)**

Researches have considered and measure Social and Economic factors like Income, Health, Education, Family live, Housing, progress on industrialization, urbanization etc. Based on this study those variables are important factors that lead a person to commit a Crime. Even though some researches have said that these factors influence rates of crime, there are others that for whom this result is not clear. In order to understand better the issue and later as a Society prevent Crime raising levels in our cities. We are going to analyze the relationship with those factors and later, take some actions to prevent Crime in our Cities. The following data analysis is going to find out how Social and Economic factor has been influencing or not, the rates of Crime in the City of Pittsburgh PA during the 2014 and 2015 in US. We are going to take in consideration the levels and rates of Population, Education, Income, House Contract, and House Value to identify some insights, patterns or trends about this social phenomenon. Also, we can compare which of them has better impact on decreasing the crime levels. Finally approve or dis approve this hypothesis.

# HYPOTHESYS

Social conditions influence Crime rate levels.

Null Hypothesis:

**If the population’s social conditions (education) get better, then Crime’s rate level will decrease.**

because schooling significantly reduces the probability

to commit a crime and be arrested.

Social Conditions: Income, Employment, Education

# DATA SOURCES:

**Data Sources:**

[**https://catalog.data.gov/dataset/pittsburgh-american-community-survey-2014-miscellaneous-data**](https://catalog.data.gov/dataset/pittsburgh-american-community-survey-2014-miscellaneous-data)

**file: educational-attainment-for-the-population-25-years-and-over\_2014**

**file:** **P\_aggregate-household-income-in-the-past-12-months-in-2015-inflation-adjusted-dollars\_ok**

**file: self-employment-income-in-the-past-12-months-for-households\_2014**

[**https://data.wprdc.org/dataset/pittsburgh-american-community-survey-2015-miscellaneous-data**](https://data.wprdc.org/dataset/pittsburgh-american-community-survey-2015-miscellaneous-data)

**file: educational-attainment-for-the-population-25-years-and-over\_2015**

**file:** **P\_aggregate-household-income-in-the-past-12-months-in-2015-inflation-adjusted-dollars\_ok**

**file: self-employment-income-in-the-past-12-months-for-households\_2015**

[**https://data.wprdc.org/dataset?q=police&page=1**](https://data.wprdc.org/dataset?q=police&page=1)

**File:** **Police Incident Blotter (Archive)**

[**https://en.wikipedia.org/wiki/Pittsburgh**](https://en.wikipedia.org/wiki/Pittsburgh)

**Population 2014,2015**

# STRATEGY

* Understanding the crime in PA- Pittsburg.
  + Get total offences by year, graph it in a line chart.
  + Get total offences by neighbor, graph in a bar chart
  + Get the top 5 neighbor increase or decrease crime offences all years.
  + Ge some conclusions.
* Where we are on e**ducatio**n levels in PA- Pittsburg.
* Compare Education levels 2014 & 2015
  + Get total of educated people by City and Neighbor.
    - Run Central tendency statistics.
    - Get some proportions.
  + Get the total count of educated people by level (Hight School, College etc)
    - Run Central tendency statistics.
* Get a summary table to compare the Central tendency measures of education.
* Get some conclusions.
* How strong is the relationship (correlation) between Education and Crime in PA- Pittsburg?
  + Get a correlation between number of incidents vs total educated people by City (plot scatter) for 2014 and 2015 (two graphs), compare.
  + Get some conclusions.
* Conclusions.
  + Based on statistical test can we reject the null hypothesis, or we fail to reject it.

## WHICH STATISTICAL TEST TO USE

|  |  |  |
| --- | --- | --- |
| DATA TYPE | SAMPLE | PURPOSE |
| House Income: Interval  Housing unit Value: Interval  Renting: Interval  **Education: Interval**  Crime offences: Interval  by neighbor: | Data sets for 2014 & 2015 | Find if Social and Economic factors increase the Crime Level; relationship between and independent variable (Employment, Income, House Pricing, House Renting) and dependent variable (Crime Level) |
|  |  |  |
| House Income: Interval | House Income: Interval  Crime offences: Interval | H0: if we increase house income then crime offences will decrease  **Central tendency**  **Correlation** |
| Housing unit Value: Interval | Housing unit Value: Interval  Crime offences: Interval | H0: if we increase the Housing unit Value then crime offences will decrease.  **Central tendency**  **Correlation** |
| Renting: Interval | Renting: Interval  Crime offences: Interval | H0: if we increase the Renting Value then crime offences will decrease. |
| **Education: Interval** | Education: Interval  Crime offences: Interval | H0: if we increase the Education level then crime offences will decrease.  **Central tendency**  **Correlation** |

# METRICS:

**File: Police Incident Blotter (Archive)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **year** | **INCIDENTLOCATION** | **INCIDENTNEIGHBORHOOD** | **INCIDENTZONE** | **HIERARCHYDESC** | **OFFENSES** |
| **Count of offences by** | **x** |  | **x** |  | **x** | **x** |

**File: educational-attainment-for-the-population-25-years-and-over (2014 & 2015).**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **year** | **Neighbor** | **High School** | **GED** | **college, less than 1 year** | **Some college, 1 or more years, no degree** | **Associate degree** | **Bachelor's degree** | **Master's degree.**  **Professional school degree.**  **Doctorate degree.** |
| **Count of educated people by** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |

# ASSEMBLE AND CLEAN

# RETRIEVE DATA

# BUILD RETRIEVAL PLAN

# ANALYZE FOR TRENDS

# ACKNOWLEDGE LIMITATIONS

# MAKE A CALL OR TELL STORY

# RESOURCES

<https://law.jrank.org/pages/11999/Causes-Crime-Social-economic-factors.html>

<http://store.ectap.ro/articole/873.pdf>

<http://www.iosrjournals.org/iosr-jhss/papers/Vol.%2021%20Issue9/Version-6/C2109061821.pdf>